

Appl. No. 09/771,797  
Amdt. dated Aug. 13, 2003  
Reply to Office action of May 19, 2003

### REMARKS/ARGUMENTS

Claims 1-3, 6, 11, 14 and 18 remain in this application. Claims 4-5, 7-10, 12-13, 15-17 and 19-22 have been canceled.

Responsive to the matters raised in paragraph 2 of the Office Action regarding the use of "n" in the previous abstract, the amended abstract deletes the use of "n".

Responsive to the matters raised in paragraph 3 of the Office Action the specification has been amended to delete the word "more" regarding positive and negative. Additionally, the specification has been amended to remove all reference to the formula " $w = (n) \times (n-1)/2$ " as well as all reference to "n". Finally, the specification has been amended to remove the word "fully" as regards redundant.

Responsive to matters raised in paragraph 4 of the Office Action regarding redundant power distribution means, the word "redundant" is not essential for describing the power distribution means. All instances of the word "redundant" have been removed.

Responsive to matters raised in paragraph 5 of the Office Action regarding claims 9 and 10, The examiner is correct in his assumption. Claims 9 and 10 have been canceled. Additionally, all instances of the words "transmit" and "receive" have been replaced by "transmitting" and "receiving" in the specification and claims.

Responsive to matters raised in paragraph 6 of the Office Action regarding claim 20, The word "fully" is not essential for describing the present invention, the application has been amended by removing all instances of the word "fully". Additionally, claim 20 has been canceled.

Responsive to matters raised in paragraph 8 of the Office Action regarding claims 1, 2 and 6, The equation is not essential for describing the present invention, the application has been amended by removing all references to the formula.

Responsive to matters raised in paragraph 8 of the Office Action regarding claim 13, the wording regarding "45 degree stations" in claim 13 does not exactly match that of the specification on page 14, line 6, claim 13 has been canceled.

Responsive to matters raised in paragraph 8 of the Office Action regarding claim 14,  $(n/2)$  of  $(n-2)/2$  and  $((n)/(2))$  of  $(n)/2$  are not essential for describing the present invention, the claim has been amended to remove all reference to these terms.

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Responsive to matters raised in paragraph 8 of the Office Action regarding claims 1, 2, 6, 13 and 14 regarding redundant power distribution means, the word "redundant" is not essential for describing the present invention. The application has been amended by removing all instances of the word "redundant".

Responsive to matters raised in paragraph 9 of the Office Action regarding claims 1, 2, 3 and 6, Our responses to paragraphs 3 and 8 of the Office Action have amended the claims to remove reference to the relationship  $w = (n) \times (n-1)/2$ . We have also amended page 10, line 20 (paragraph [0039]) and page 11, line 6 (paragraph [0040]).

Responsive to matters raised in paragraph 10 of the Office Action regarding claims 14 and 15, our responses to paragraph 8 of the Office Action have amended the claims to remove reference to  $(n/2)$  of  $(n-2)/2$ . We have also amended page 10, line 20 (paragraph [0039]) and page 11, line 6 (paragraph [0040]). In general, we have removed all reference to "n" in order to avoid confusion.

Responsive to matters raised in paragraph 23 of the Office Action regarding claims 7-11, 18 and 20-22; claims 7-10 and 20-22 have been canceled. Claims 11 and 18 remain in this application. The examiner states that Popoff (Figures 1-8) shows a plurality (n, six in this case) of waveguide plates, each having several (m, 2 in this case) pairs of side-by-side optically isolated paths with input and output ports for receiving and/or transmitting optical signals and a coupler 16 to connect various signals. We object to the language used by the examiner to describe the Popoff invention because this language does not appear anywhere in the Popoff patent specification or claims:  
The language "waveguide plates" does not appear anywhere in the Popoff specification or claims.  
The language "pairs" does not appear anywhere in the Popoff specification or claims.  
The language "side-by-side" does not appear anywhere in the Popoff specification or claims.  
The language "optically isolated paths" does not appear anywhere in the Popoff specification or claims.  
The language "coupler" does not appear anywhere in our present specification or claims (our invention does not use couplers of any sort since they defeat the purpose of optical isolation. To further this point, we review our claim language in view of the examiner's statement; Our Claim 11 describes a specific implementation of a waveguide plate that provides optical isolation of a plurality of side-by-side pair paths. Popoff clearly intends broadcast, mixed and coupled transmission of only one signal per star coupler as is clearly shown in his figures 2 and 3: these are completely different from the signal paths shown, for example, in our figure 8. The optically isolated paths and pairs are clearly not anticipated by Popoff. Fundamentally, the Popoff invention will not work with optically isolated paths; our invention will not work with broadcast, mixed and coupled paths such as those described by Popoff. Those skilled in the art would recognize that Popoff can not perform the function of a full mesh backplane. Those skilled in the art would recognize that Popoff does not perform the function of optical isolation in a waveguide plate. Those skilled in the art would recognize that Popoff does not perform the function of transporting a plurality of signals in pairs of side-by-side paths since Popoff mixes, couples and broadcasts signals in a given path. We claim in independent claim 18: A waveguide plate for an optical interconnect comprising at least one pair of side-by-side optically isolated paths passing through the body with the optical paths being optically accessible at spaced pairs of adjacent optically isolated ports at the surface of the body, the ports being recesses defining

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positive locating means for an electro-optical interface and for receiving another set of waveguides to extend the optical paths directly onto a circuit board assembly.

The Popoff invention does not illustrate in drawings or describe in text waveguide plate.

The Popoff invention does not illustrate in drawings or describe in text pair.

The Popoff invention does not illustrate in drawings or describe in text side-by-side.

The Popoff invention does not illustrate in drawings or describe in text optically isolated.

The Popoff invention does not illustrate in drawings or describe in text spaced pairs.

The Popoff invention does not illustrate in drawings or describe in text adjacent optically isolated.

The Popoff invention does not illustrate in drawings or describe in text recesses.

The Popoff invention does not illustrate in drawings or describe in text positive locating means.

The Popoff invention does not illustrate in drawings or describe in text receiving another set of waveguides.

The Popoff invention does not illustrate in drawings or describe in text directly.

Our Claim 18 describes a specific implementation of a waveguide plate that provides optical isolation of side-by-side pair paths in an extension of the backplane directly onto the circuit board assembly. Popoff clearly describes the use of multiple levels of connection and the use of fiber optic cable in his backplane to circuit board interconnects. Those skilled in the art would recognize that Popoff can not perform the function of a direct extension of the backplane optical paths to the circuit board since Popoff uses fiber optic cables to provide this interconnect, we do not use fiber optic cables.

In the event Examiner persists in any of the rejections, it is respectfully requested that the Examiner telephone the undersigned applicant in order to discuss the application and to expedite prosecution thereof.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted

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